

**What is claimed is:**

1        1. An electrophotographic image printing method for an electrophotographic imaging  
2        apparatus, comprising the steps of:

3                providing an electrophotographic imaging apparatus, the electrophotographic imaging  
4        apparatus including: a charge roller; a developer roller; a laser scanning unit; a transfer roller; an  
5        organic photoconductor; a power supply unit for supplying power to the charge roller, the  
6        developer roller, the laser scanning unit, and the transfer roller; and a controller for controlling  
7        the power supply unit, the charge roller, the developer roller, the laser scanning unit, the transfer  
8        roller, and the organic photoconductor;

9                selecting a resolution for electrophotographic printing;

10                charging the organic photoconductor by selectively applying to the charge roller a charge  
11        voltage corresponding to the resolution selected for the electrophotographic printing;

12                forming an electrostatic latent image on the charged organic photoconductor by the laser  
13        scanning unit and applying toner particles adhering to the developer roller to the electrostatic  
14        latent image to form a visible image; and

15                transferring the visible image formed on the organic photoconductor to a print medium.

1        2. The method of claim 1, further comprised of:

2        setting the charge voltage applied to the charge roller to be relatively higher in magnitude

3 for a lower level of the resolution selected than for a higher level of the resolution selected.

1 3. The method of claim 1, further comprised of:

2 the resolution selected being any one of 600 dpi. and 1200 dpi.

1 4. The method of claim 1, further comprised of:

2 applying a charge voltage of -1.35 kV to the charge roller as the charge voltage when the  
3 resolution selected is 1200 dpi., and applying a charge voltage to the charge roller of -1.4 kV as  
4 the charge voltage when the selected resolution is 600 dpi.

1 5. The method of claim 1, further comprised of:

2 applying selectively the charge voltage to the charge roller to reduce gray pattern level  
3 variation.

1 6. The method of claim 5, further comprised of:

2 reducing the gray pattern level variation at a low resolution by applying a charge voltage  
3 to the charge roller that is relatively increased in magnitude with respect to a charge voltage  
4 applied to the charge roller to reduce the gray pattern level variation at a high resolution.

1 7. The method of claim 1, further comprised of:

2           selectively adjusting the charge voltage applied to the charge roller corresponding to the  
3           resolution selected for the electrophotographic printing to reduce image concentration variation.

1           8. An electrophotographic printing method for an electrophotographic imaging  
2           apparatus, comprising the step of:

3           providing an electrophotographic imaging apparatus, the electrophotographic imaging  
4           apparatus including: a charge roller; a developer roller; a laser scanning unit; a transfer roller; an  
organic photoconductor; a power supply unit for supplying power to the charge roller, the  
developer roller, the laser scanning unit, and the transfer roller; and a controller for controlling  
the power supply unit the charge roller, the developer roller, the laser scanning unit, the transfer  
roller, and the organic photoconductor:

5           selecting a print mode for electrophotographic printing;

6           charging the organic photoconductor by selectively applying to the charge roller a charge  
7           voltage corresponding to the print mode selected for the electrophotographic printing;

8           forming an electrostatic latent image on the charged organic photoconductor by the laser  
9           scanning unit and applying toner particles adhering to the developer roller to the electrostatic  
10          latent image to form a visible image; and

11          transferring the visible image formed on the organic photoconductor to a print medium.

12          9. The electrophotographic printing method of claim 8, further comprised of:

2 setting the charge voltage to be relatively higher in magnitude for a text mode as the print  
3 mode selected than for a graphics mode as the print mode selected.

10. The method of claim 8, further comprised of:

the print mode selected corresponding to one of a text mode and a graphics mode.

11. The method of claim 10, further comprised of:

the text mode being of a relatively lower resolution than a resolution for the graphics

12. The method of claim 8, further comprised of:

applying to the charge roller a charge voltage of -1.4 kV as the charge voltage when the print mode selected is a text mode, and applying a charge voltage to the charge roller of -1.35 kV as the charge voltage when the print mode selected is a graphics mode.

13. The method of claim 8, further comprised of:

applying selectively the charge voltage to the charge roller to reduce gray pattern level variation.

14. The method of claim 13, further comprised of:

2 reducing the gray pattern level variation at a low resolution by applying a charge voltage  
3 to the charge roller that is relatively increased in magnitude with respect to a charge voltage  
4 applied to the charge roller to reduce the gray pattern level variation at a high resolution.

1 15. The method of claim 8, further comprised of:  
2 selectively adjusting the charge voltage applied to the charge roller corresponding to the  
3 print mode selected for the electrophotographic printing to reduce image concentration variation.

16. An electrophotographic imaging apparatus for electrophotographic printing,  
comprising:

6 a charge roller;

7 a developer roller;

8 a laser scanning unit;

9 a transfer roller;

10 an organic photoconductor;

11 a power supply unit for supplying power to the charge roller, the developer roller, the  
laser scanning unit, and the transfer roller;

12 a controller for controlling the power supply unit, the charge roller, the developer roller,  
the laser scanning unit, the transfer roller, and the organic photoconductor;

means for selecting a resolution for electrophotographic printing;

13       means for charging the organic photoconductor that selectively applies to the charge  
14      roller a charge voltage to charge the organic photoconductor, the charge voltage corresponding to  
15      the resolution selected for the electrophotographic printing;

16       means for forming an electrostatic latent image on the charged organic photoconductor  
17      and for applying toner particles adhering to the developer roller to the electrostatic latent image  
18      to form a visible image; and

19       means for transferring the visible image formed on the organic photoconductor to a print  
20      medium.

17. The electrophotographic imaging apparatus of claim 16, further comprised of:  
the means for charging selectively charges the charge roller with a charge voltage that is  
relatively higher in magnitude for a lower lever of the selected resolution than for a higher level  
of the selected resolution.

1       18. The electrophotographic imaging apparatus of claim 16, further comprised of:  
2       the means for selecting is for selecting a resolution of one of 1200 dpi. and 600 dpi.

1       19. The electrophotographic imaging apparatus of claim 18, further comprised of:  
2       the means for charging applies to the charge roller a charge voltage of -1.35 kV as the  
3       charge voltage when the resolution selected is 1200 dpi., and the means for charging applies a

4 charge voltage to the charge roller of -1.4 kV as the charge voltage when the resolution selected  
5 is 600 dpi.

1 20. The electrophotographic printing apparatus of claim 16, further comprised of:  
2 the means for charging selectively applies to the charge roller a charge voltage of one of -  
3 1.4kV and -1.35kV as the charge voltage.

21 An electrophotographic imaging apparatus for electrophotographic printing,  
comprising:

7 a charge roller;

8 a developer roller;

9 a laser scanning unit;

10 a transfer roller;

11 an organic photoconductor;

12 a power supply unit for supplying power to the charge roller, the developer roller, the  
laser scanning unit, and the transfer roller;

13 a controller for controlling the power supply unit, the charge roller, the developer roller,  
the laser scanning unit, the transfer roller, and the organic photoconductor;

means for selecting a print mode for electrophotographic printing;

means for charging the organic photoconductor that applies to the charge roller a charge

14       voltage to charge the organic photoconductor, the charge voltage corresponding to the print mode  
15       selected for the electrophotographic printing;

16           means for forming an electrostatic latent image on the charged organic photoconductor  
17       and for applying toner particles adhering to the developer roller to the electrostatic latent image  
18       to form a visible image; and

19           means for transferring the visible image formed on the organic photoconductor to a print  
20       medium.

22. The electrophotographic imaging apparatus of claim 21, further comprised of:

the means for charging selectively charges the charge roller with a charge voltage that is relatively higher in magnitude for a text mode as the print mode selected than for a graphics mode as the print mode selected.

1       23. The electrophotographic imaging apparatus of claim 21, further comprised of:

2       the print mode selected being one of a text mode and a graphics mode.

1       24. The electrophotographic imaging apparatus of claim 23, further comprised of:

2       the means for charging applies to the charge roller a charge voltage of -1.35 kV as the  
3       charge voltage when the print mode selected is the graphics mode, and the means for charging  
4       applies to the charge roller a charge voltage of -1.4 kV as the charge voltage when the print mode

5 selected is the text mode.

25. The electrophotographic printing apparatus of claim 21, further comprised of:

the means for charging selectively applies to the charge roller a charge voltage of one of -

1.4 kV and -1.35 kV as the charge voltage.